

BUILDING EDUCATION ECOSYSTEM

ISBN 978-602-6187-55-6



PROCEEDING

International Seminar on Education

“BUILDING EDUCATION ECOSYSTEM”

PROCEEDING

International Seminar on Education

5-6 May, 2016

Guest Editor :

- Prof. Dr. Baharuddin Aris
- Prof. Dr. Jasruddin Malago, M.Sc
- Prof. Dr. Gufran D. Dirawan, M. EMD
- Prof. Dr. Yusof Boon



MUHAMMADIYAH UNIVERSITY OF MAKASSAR
FACULTY OF EDUCATION
INDONESIA

Faculty of Teacher Training and Education
The University of Muhammadiyah Makassar
South Sulawesi
Indonesia

<http://www.seminar.fkipunismuhmks.org>

First Published 2016

TITLE: PROCEEDING OF INTERNATIONAL SEMINAR & CONFERENCE
2016

EDITOR:

Erwin Akib, Pantja Nurwahidin, Ismail Sangkala, Muh. Arfin Bin Muh. Salim,
M. Agus

GUEST EDITOR:

Baharuddin Aris, Yusof Boon, Jasruddin Malago, Gufran Darma Dirawan

ISBN: 978-602-8187-55-8

About the cover: Design by Muh. Zia Ul Haq. Made with processing

About the Logo: Designed by Makmun

About the photo: Abd. Rajab “Menara Iqra and Balai Sidang Mukhtar”

Foreword

The First International Seminar & Conference on Education 2016, Building Education Ecosystem, represents a growth and experience of a conference on education. The purpose of this seminar and conference is to make a scientific contribution to the field of education through discussion and publication on progress in English Language Education, Mathematics, Managements, Physics, Arts, Biology, Indonesian Language studies, Civic, and Sociology. Contributions come from experts, teachers, lecturers and graduate students from all around the archipelago.

This year the conference received 80 paper submissions and around 47 selected papers to publish at the proceeding papers. The conference invited keynote speakers from four different countries, they were from Malaysia, Japan, Australia, and Indonesia itself. Decisions about paper acceptances were reviewed and approved by the steering committee and reviewers.

The collection of papers in this conference proceedings shows a maturity in the field through new examples of pedagogical issues and theoretical advances in understanding education ecosystems. The conference success as we see publications that build on the advance references to papers published. We look forward to this publication providing the foundation for future developments in Education issues or education ecosystem.

Makassar, May 5, 2016

Indonesia

The 1st International Conference Committee

Conference Chairs

General Chair: Khaeruddin, Universitas Muhammadiyah Makassar, Indonesia

Program Chair: Marup, Universitas Muhammadiyah Makassar, Indonesia

Key Speakers

Prof. Madya Dr. Yusof Boon (Universiti Teknologi Malaysia, Malaysia)

Dr. Ir Paristianti Nurwandani, M.Ap (KEMENRISTEKDIKTI, Indonesia)

Dr. H. Irwan Akib, M.Pd. (Muhammadiyah University of Makassar, Indonesia)

Patrick Direen (University of New England, Australia)

Momoka Yunoki (Japan)

Steering Committee

Muhalim

Nur Devi bt Abduh

Nunung Anugrawati

Farisha Andi Baso

Muhammad Astrianto Setiadi

Dian Pramana Putra

Ardiana

Wongso Adi Saputra

Syarifuddin

Suardi

Abd. Rajab

Contents

Session 1. Biology Education, Natural Science

Benefit of Guest Lecturer in Increasing Questioning Ability about Human Reproduction System. <i>Netty Demak H.Sitanggang, Herlina Sembiring</i> -----	1
Differences in Learning Outcomes in Subject of Natural Science through Checks Pair of Cooperative Learning Model and Cooperative Learning Model Make a Match <i>Ana Hadiyati Arif, Rais Hidayat, Donna Sampaleng, Iskandar</i> -----	12
Emotional Intelligence and Relationship with Self-Regulation of Biology Student Learning State of High School in Makassar <i>Anisa</i> -----	20

Session 2. Language Studies and Literature

Subtitled Films And Learning Listening Comprehension: A study in Bulukumba, Indonesia <i>Anugerah Febrian Syam</i> -----	29
An Error Analysis on English Clauses Made by Students <i>Ratna Dewi, Mufthihaturrahmah Muthahhir</i> -----	38
“EFL Students’ Strategies in Overcoming Anxiety in Speaking English: A Qualitative Study of Freshmen Students of English Department, Muhammadiyah University of Makassar. <i>Nurdevi Bte Abdul, Nunung Anugrawati, Jamaluddin Arifin</i> -----	48
Investigating the Teaching Skills of High School English Teachers <i>Dzur Rif’ ah Mahmudah, Eka Prabawati Rum</i> -----	56
The Process and Circumstance in Instructional Material “English Module for MKWU” <i>Syarifa Rafiqah</i> -----	65
Teaching Reading Comprehension by Using Flash Media Animation of Junior High School Students <i>Waode Hamsia</i> -----	75
The Use of Predict-Explain-Observe-Explain In Improving the Students’ Speaking Ability <i>St. Asriati AM</i> -----	82

Language Learning Skills Strategy based on Local Wisdom	
<i>Munirah</i> -----	93
Suggestopedia Method in Language Learning	
<i>Rosdiana</i> -----	101

Session 3. Technology and Management System of Education,

Guidance & Counseling, Higher Education Policy

Analysis of Management System of Modern Islamic Boarding School	
Research in Daar El-Qolam Islamic boarding School Tangerang Banten	
<i>Firmansyah</i> -----	109
Proposed English Syllabus for Student Management of Borneo University Tarakan	
<i>Arifin</i> -----	119
Performance Analysis of Primary School Teachers; Study on Teachers Who Have Passed Certification Program	
<i>Tambunan, Nana Sumarna</i> -----	130
The Role of Self-Concept on Improving the Performance of Guidance and Counseling Teacher at Senior High School (SMA) Level	
<i>Julinda Siregar</i> -----	143
The Effect of Certification and Self-Concept on the Lecturers' Performance of Private Higher Education at Kopertis Wilayah III Jakarta	
<i>Hotmaulina Sihotang</i> -----	156
Learning Software Development Civics Model Guided Inquiry Critical Thinking Ability to Train Students	
<i>Muh. Erwinto Imran</i> -----	164
The Influence Of Effectively Of Supervision, Academic Culture, Self-Learning, And Pedagogic Competence Towards Commitment Of Teacher Profession Of State Junior High School In Duren Sawit District East Jakarta	
<i>Miftachul Hidayah</i> -----	178
Students' Perception on the Teacher Role in Teaching and Learning Process at SD Negeri Ma' lengu	
<i>Ramlati</i> -----	186
The Evaluation of Risk Management Certification Program for the Directors, the Commissioners and the Officers of Commercial Bank	
<i>Dewi Gunherani</i> -----	193

Effect of Method of Survey, Question, Read, Recite, Metacognitive Skills Review of Results and Learning Materials Ecosystem High School Student	
<i>Rahmatia Thahir</i>	215

Session 4. Mathematic Science and Education

The Mediating Effect of Organizational Commitment on Leadership Type and Job Performance	
<i>Marislinda</i>	225
Based on The Tendency of procedural Knowledge	
<i>Herna</i>	234
Developing the Students' Problem Solving, Critical Thinking Skill and Mathematics Disposition	
<i>Isnaniah</i>	243
A Study on the Spatial Ability of Mathematics Education Students	
<i>Isnaniah</i>	252
The Set of STAD Cooperative Learning Approach to Content of Geometry Problem Posing for Class X High School	
<i>Hasfiah</i>	264
Learning Active Creative Effective and Fun in Learning Mathematics at the Elementary School	
<i>Mar' atun Qanita, Irwan Akib, Baharullah</i>	271
Improving Mathematics Communication of Junior High School Students through Inquiry Alberta Learning Model	
<i>Muhammad Rizal Usman, Irwan Akib</i>	279
The Influence of Reward and Punishment toward Students' Activeness in Mathematic Lesson	
<i>Putri Kaptiningtyas, Yuyun Elizabeth Patras, Baharudin</i>	287

Session 5. Physics Education

The Influence of Learning Model and Thinking Style Toward Physics Problem Solving Ability in Senior High School	
<i>Hartono Bancong, Irma Safitri Mustamin, Ma' ruf</i>	293
Developing Activity-Based Assessment Device to Improve the Process Skill of Physics Experiment	

Nurlina -----301

Implementation Blended Learning Strategies to Physics Learning Outcomes
SMKN 1 South Sulawesi

Ma' ruf, Hartono Bancong -----312

The Development of Health Physics Learning Device Oriented on Direct Learning Model
to Develop Declarative and Procedural Ability

Dewi Hikmah Marisda -----317

Developing Assessment Search Learning Device to Improve Achievement Motivation and
Learning Outcomes of Physics Subject at Class XI IPA of SMA Negeri 22 Makassar

Andi Junaede -----324

Determination of Lower Boundary Ramsey Numbers for Stars Graph S8 on Wheels Graph
W₁₂

Andi Ardhila Wahyudi -----336

Determination of Lower Boundary Ramsey Numbers Graph of Star S8 on Wheels W₁₀

Hamdana Hadaming -----343

Critical Thinking Skills of Students Senior High School Newton 'S Laws Materials and
Application

Khaeruddin, Mohammad Nur, Wasis -----348

Session 6. Early Childhood and Primary Education

The Relationships of Job Stress, Job Satisfaction and Organizational Commitment in
Private Primary School Teachers in Indonesia

Ismia Muksidar -----355

Reading, Writing, and Arithmetic Learning For Early Childhood Risk at Hampering
Children Mentality

Herwina Bahar, Siska Kusumawardani -----368

The Effect of Work Characteristics, Development and Motivation on Performance of
Operator Basic State School in Jakarta

Dede Hamdani -----374

Session 7. Social Science Studies and Civics

Method of Successive Interval in Community Research
(Ordinal Transformation Data to Interval Data in Social Science Studies)

Sudirman Kadir -----382

The Effect of Organizational Culture, Teamwork and Organizational Development on Organizational Commitment: The Mediating Role of Human Capital	
<i>Sintha Wahjusaputri</i> -----	392

Curriculum of 2013 as a Mode for Character Builder of Social Studies in the Elementary School (Case Study at SDN Kompleks Kapota Yudha Makassar)	
<i>Syarifah Aeni Rahman</i> -----	404

The Role of Pancasila and Citizenship Education in Creating Morality and Ethic of Children Character (a Case Study at University of Muhammadiyah Makassar)	
<i>Rismawati</i> -----	411

Old Bike Community of Makassar	
<i>Lukman Ismail</i> -----	419

Panel Session (PowerPoint Presentation):

New Academia Learning Innovation (NALI)	
<i>Yusof Boon</i> -----	429

Education in Australia	
<i>Patrick Direen</i> -----	433

Education in Japan: Future and English Language	
<i>Momoka Yunoki</i> -----	437

Additional Paper : Language Studies, and Civics

Human Existence In The Collection Of Poetry Anwar Works: Study Of Semiotic	
<i>Andi Hasniar Asfar, Andi Sukri Syamsuri</i> -----	440

Analysis Of Characters In The Novel Of Ronggeng Dukuh Paruh By Ahmad Tohari	
<i>Faridah, Andi Sukri Syamsuri</i> -----	449

Innovation Of Indonesian Language Learning In Improving Learners Competence	
<i>Siti Suwadah Rimang, Andi Adam</i> -----	456

Politeness In Enhancing Innovation In Learning Indonesian Language	
<i>Syafruddin and Siti Suwadah Rimang</i> -----	462

Developing Civics Learning Devices Using Guided Inquiry to Train Students' Critical Thinking Skills	
<i>Muhajir</i> -----	467

Critical Thinking Skills of Students Senior High School Newton 'S Laws Materials and Application

Khaeruddin, *Physics Education Study Program, State University of Makassar*

Email: udinmks@yahoo.com

Mohammad Nur, *PPs Science Education Studies Program, State University of Surabaya*

Wasis, *PPs Science Education Studies Program, State University of Surabaya*

ABSTRACT

This study aims to describe the development of the Critical Skills Thinking Matter Newton's Law on Student SMAN 9 Makassar. To see the development of students' critical thinking skills seen from gain score of students before and after treatment. The results of inferential analysis showed significant differences between the experimental class (using model of Fostering Critical Thinking Skills/GCTS) the control class. This means GCTS learning model, can significantly raise high school students' critical thinking skills. Judging the amount of the effect (effect size), by calculating the difference between the average gain score critical thinking skills of students who are taught by learning model of GCTS of 0.26 and average critical thinking skills of students who are taught by without learning model of GCTS at 0.11 divided by the standard deviation the control group of 0.05. The result of the calculation is found that the magnitude of the effect of the use of the learning model of GCTS on learning of physics in order to foster critical thinking skills is 3:00 compared to learning without learning model of GCTS (control group). That is about three times larger than the average students' critical thinking skills that are taught without using model of GCTS. This indicates that the use of models of learning in the process of learning physics GCTS give effect to the development of students' critical thinking skills.

Keywords: Profiles, Critical Thinking Skills, Physics, interpretation, analysis, inference.

Introduction

Physics is a one of branch science. Underlying the development of advanced technology and harmonious living concept with nature. As science the study of natural phenomena, physics also give good lessons shown for mankind to review living in harmony based on natural law. On level Senior High School (SHS) is deemed important to review physics is taught as a separate lesson with several considerations. First, in addition to providing supplies to students of science, physics was intended as a vehicle to growing thinking skills that are useful to solve problems in everyday life.

Second, the eyes should be taught physics lesson for review purposes more specific, i.e. equip students' knowledge, understanding and ability The required number for a review into the higher education level As well as developing science and technology. By Therefore, hearts Curriculum physics should have undertaken to review the growing ability of Thinking, Scientific work, being communication and as the prayer one important aspect of Life Skills (BSNP, 2006). Singer statement in line with the skills needed for the review to develop 21st Century Technology, i.e. cognitive skills, interpersonal skills, and interpersonal

skills. In this regard, Critical Thinking skills is seen as cognitive skills hearts interpretation, analysis, evaluation, inference, explain, and arrangements Yourself (Bailin, S., et al., 1999).

The above description shows that the critical thinking skills are skills that must be cultivated for students to be able competitive in the 21st century , but to spur the development of thinking skills , including critical thinking skills , students must develop process skills (BSNP , 2006). According Karamustafaoglu (2011), the development of science process skills enable students construct and solve problems and think critically. This possibility can occur because the components of critical thinking is largely a component of science process skills such as designing experiments, testing hypotheses, hypothesizing, predicting, inferring, classifying, measuring, observing (Hassard, J., 2005, p.332). Thus, if the students developing science process skills, then allegedly critical thinking skills they will develop. It is supported by the results of research Liliarsari (2008) which states that the critical thinking skills can be developed through the development of science process skills.

Research Method

This study is a descriptive study to reveal the critical thinking skills of high school students. Providing critical thinking skills test to some high school students in the city of Makassar with the number of

students as many as 200 people. Critical Thinking Ability Test (CTAT) of Physics prepared with the following steps: (i) Adapting the questions of the book Physics: Principles and problems bouquet Zitzewitz, P., W., et. al. Problems are adapted are the questions that correspond with the indicators of critical thinking skills, namely: interpretation, analysis, and inference, (ii) provide to some colleagues who set education undergraduate, masters, and doctoral degrees to validate readability (readability) matter physics critical thinking skills. The technique of collecting the data is Critical Thinking Ability Test (CTAT) of Physics to measure students' critical thinking skills include high level cognitive processes items, namely interpretation, analysis, and inference through scientific procedures in order to solve the problem. While the Data analysis technique used is quantitative descriptive techniques.

Results and Discussion

Results

Critical thinking skills test results Students are praying one objective Implementation of Learning Model of GCTS. Therefore, to see the development of critical thinking skills of students seen from gain score of students before and after treatment with GCTS learning model in this study. The gain score as test results of students' critical thinking can be seen in Table 1 below.

Table 1. Gain Score Test Results Critical Thinking Skills

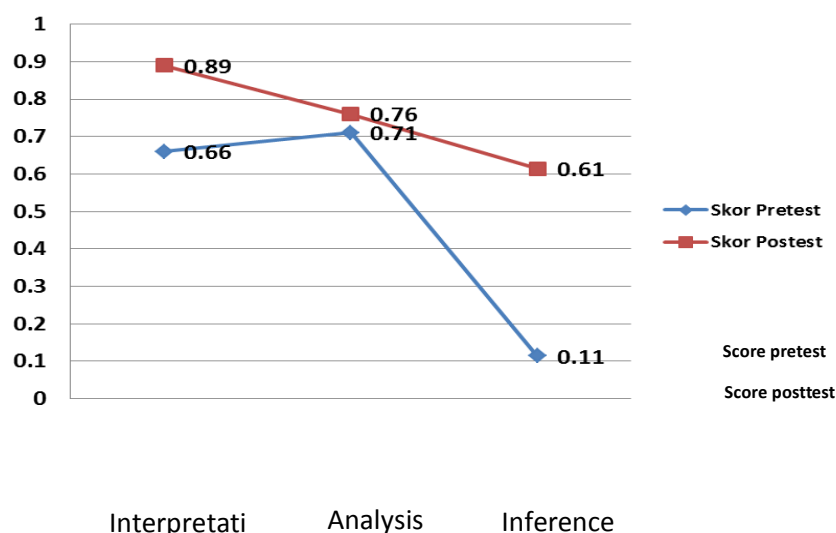
Indicators Thinking Skills	Critical	experiment class		control class	
		Score Pretest	Score Posttest	Score Pretest	Score Posttest
Interpretation		0.66	0.89	1.05	1.10
analysis		0.71	0.76	1.35	0.58
inference		0.11	0.61	0.57	1.63
Scores Average		0.49	0.75	0.99	1.10
Ideal score		27	27	27	27
Gain		0.36		0.07	
Index gain		low		low	

Table 1 shows an increase in the students' critical thinking skills, although still relatively low. However, on average the experimental class is higher increase, when compared with the control class.

Discussion

The test results of students' critical thinking skills is one purpose of the implementation of GCTS learning model. Therefore, to see the development of critical thinking skills of students seen from gain score of students before and after treatment with

GCTS learning model. Table 4.9 shows that on average students' critical thinking skills that include interpretation, analysis, and inference progressing after following study by using model of GCTS in this study, i.e. from an average of 0.49 to 0.75 with an average the maximum that may be obtained by students is 3. In detail can be seen in chart 4 below.



Graph 1. The Test Results of Students' Critical Thinking Skills

Graph 1 shows that the index gain score it's still relatively low at 0.26. The low gain score, because the learning process is only performed during 4 meetings. This means that students still have little opportunity to learn critical thinking exercises. Though Perkins, Jay, & Tishman (1993), Halpern (1995), Samani, M. (2006), states that learning requires a lot of practice critical thinking and critical thinking skills to be used as a "thinking culture". Critical thinking skills should be taught continuously (Drost, 1998: 169). Therefore, to develop students' cognitive skills including critical thinking skills is not an easy job, it takes a long time to build and develop the skills (Nur, 1998). So students should be more involved with the objects of concrete, active students act and act as a scientist. Thus, students will be accustomed and trained as well as direct experience.

As mentioned previously, one based on Table 4.9 shows an increase in the students' critical thinking skills, although still relatively low. However, the average class taught using learning model of GCTS (experimental group) higher increase, when compared with the control class. To determine whether the difference is significant or not, then do inferential statistics. The results of inferential analysis by SPSS acquired asymp sig (2-tailed) as the p-value. Because the p-value obtained for $0.004 < \alpha = 0.05$ (5%), it means that there are significant differences between the experimental class (using model of GCTS) with grade control. This means that the CBC Learning model, can significantly raise high school students' critical thinking skills. Judging the amount of the effect (effect size), by calculating the difference between the average gain score critical thinking skills of students who are

taught by GCTS learning model of 12:26 and average critical thinking skills of students who are taught by without GCTS learning model at 0:11 divided by the standard deviation the control group of 0.05 (Joyce et al, 2011: 67). Top of FormThe result of the calculation is found that the magnitude of the effect of the use of GCTS learning model in teaching physics in order to foster critical thinking skills is 3.00 compared to learning without GCTS learning model (control group). That is about three times larger than the average students' critical thinking skills that are taught without using model GCTS. This indicates that the use of models of learning GCTS in the process of learning physics give effect to the development of students' critical thinking skills.

The big difference between students' critical thinking skills are taught through learning model of GCTS with without GCTS learning model: (i) allow students to read, think, and formulate their thoughts in writing so as to encourage students express his views by giving interpretations of a given problem, (ii) Students can identify as many as possible agendas of issues relevant to learning materials, so that they can choose one of the problems and is formulated in hypothetical form (temporary answer to the question problem), (iii) students to exchange ideas in small groups that can not only increase the interest of students, but also can improve critical thinking, (iv) provides the opportunity for students to interact, reflection, and feedback in solving problems or in the process of formative assessment so that they develop critical thinking skills especially reasoning, (v) students perform activities associated with moral responsibility, social values, the

benefits of science to science and human life, as well as the attitudes and actions such as curiosity, honesty, thoroughness, diligence, caution, tolerant, saving, critical and decision-making through activities authentic investigation. So students will be familiar with a set of procedures critical thinking, (vi) students perform interpretation and inference associated with the data results of the investigation group, resulting in increased skills of interpreting and inference students based on data and develop self-confidence.

The sixth reason mentioned above in accordance with the opinion of Kincaid (2004) states that the critical thinking skills can be developed through: (a) asking questions that encourage students to express their views and ideas, (b) provides the opportunity for students to discuss in an open-ended regarding important issues and prepare reason, (c) provide opportunities for students to take part in the cooperation, solve problems and make decisions, (d) directed learning on specific skills such as interpretation, analysis, and inference, (e) learning refers to the principles of logical thinking and give practice in identifying errors in expressing logical reasons. Associated with the model or learning methods and its relationship with the critical thinking skills, Bailin et al., say that "Critical thinking involves the ability to respond constructively to others during group discussion, which implies interacting in pro-social ways by encouraging and respecting the contributions of others (Lai, E.R., 2011, p. 34)." This is reinforced research Hall (2011) which states that the method of debate (discussion) can improve communication skills, improve critical thinking skills, problem solving, and develop self-confidence. Abrami say that

"Positive and significant effect of collaborative learning for improving students' critical thinking skills and dispositions (Lai, E.R., 2011, p.35)." Collaborative learning effectively improve students' critical thinking skills.

Conclusions and Recommendations

Learning model developed to foster students' critical thinking skills. This can be seen in the average class taught using learning model of GCTS (experimental group) higher increase, when compared with the control class. The results of inferential analysis showed significant differences between the experimental class (using model of GCTS) with grade control class. This means that the GCTS Learning model, can significantly foster critical thinking skills of high school students. Judging the amount of the effect (effect size), by calculating the difference between the average gain score critical thinking skills of students who are taught by learning model of GCTS of 12:26 and average critical thinking skills of students who are taught by without learning model of GCTS at 0:11 divided by the standard deviation the control group of 0.05. The result of the calculation is found that the magnitude of the effect of the use of GCTS learning model in teaching physics in order to foster critical thinking skills is 3:00 compared to learning without learning model of GCTS (control group). That is about three times larger than the average students' critical thinking skills that are taught without using model of GCTS. This indicates that the use of models of learning of GCTS in the process of learning physics give effect to the development of students' critical thinking skills.

Reference

- Bailin, S., Case, R., Coombs, J.R., Daniels, L.B. Common Misconceptions of Critical Thinking. *Journal of Curriculum Studies* vol 31, no. 3, 269-283, 1999.
- Brookfield, S. D., Tennant, M., Pogson, P. *Theory and methods of educating adults*. New York: Wiley, 2005.
- Burden, P.,R. & Byrd, D.M. *Methods for effective teaching* (4th ed). Boston, M.A: Allyn & Bacon, 2007.
- Bruning, Roger H., Schraw, Gregory J., Ronning, Royce R. *Cognitive Psychology and Instruction* Second Edition. Ohio: Prentice Hall, 1995.
- BSNP, T. *Standar Isi*. Jakarta: Badan Standar Nasional Pendidikan, 2006.
- Depdiknas. *Kurikulum Berbasis Kompetensi Mata Pelajaran Fisika SMA dan MA*. Jakarta: Depdiknas, 2003.
- Ennis. *Critical Thinking*. New York: Prentice hall, upper saddle river, 1996.
- Facione, P.A. (2006), *Critical thinking: What it is and why it counts*. [Online] Available: www.calpress.com/pdf_files/what&why.pdf (May 7, 2011), 1996.
- Hassard, J. *The Art Teaching Science*. New York: Oxford University Press, 2005.
- Irani, Rudd, Gallo, Rickets, Friedel, & Rhoades. (2007). *Critical Thinking*. Florida: University of Florida, 2007.
- Jennifer H. (1998). *Effect of A Model for Critical Thinking on Student Achievement in Primary Source Document Analysis and Interpretation, Argumentative, Reasoning, Critical Thinking Dispositions, and History Content in A Community College History Course*. Florida: Disertation, Education University of South Florida, 1998.
- Karamustafaoglu. (2011). *Improving the Science Process Skills Ability of Science Student Teachers Using I Diagrams*. *Eurasian Journal of Physics and chemistry Education*, 26-36. 2011.
- Khaeruddin. *Analisis Keterampilan Berpikir Kritis Siswa SMA. Laporan Preliminary Study*. PPs Unesa Surabaya, 2013.
- Khaeruddin. *Karakteristik Perangkat Pembelajaran Guru SMA di Tinjau dari Perspektif Keterampilan Berpikir Kritis*. *Prosiding Universitas Jember*, 2013.
- Kincaid, M. *Learning Thinking and Creative*. Scotlandia: Learning and Teaching Scotland, 2004.
- Kuhn, D. *A Developmental model of Critical Thinking Educational researcher* 28, 16-26, 46, 1999.
- Mc Peck. *Taching Critical Thinking: Dialogue and Dialectica*: Routledge, 1990.
- Nur, M. (1998). *Proses Belajar Mengajar dengan Pendekatan Keterampilan Proses*. Surabaya: SIC Surabaya, 1998.
- Ozkahraman S &Yildirim B. *An Overview of Critical Thinking in Nursing and Education*. *American International Journal of Contemporary Research* Vol. 1 No. 2; September 2011.
- Paul, R. *Critical Thinking: What every person needs to survive in rapidly changing world*, Binker, A.J. A(ed) Rohnert Park, CA: center for Critical Thinking and moral critigue, 1990.

- Perkins, D.N, Jay, E., & Tishman, S. Beyond abilities: A dispositional theory of thinking. *Merril-Palmer Quarterly: Journal of Developmental Psychology* 39 (1): 1-21 1993.
- Rudinow, J & Barry, V.E. *Invitation to Critical Thinking*. New York: Thomson Higher Education, 2008.
- Siegel, H. *Educating reason: Rationality Critical Thinking and education*. London: Routledge 1998.
- Toharudin, U., Sri Hendrawati., Rustaman, A. *Membangun Literasi Sains Peserta Didik*. Bandung: Humaniora, 2011.